

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

To:

see form PCT/ISA/220

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/GB2005/000209

International filing date (day/month/year)
21.01.2005

Priority date (day/month/year)
23.01.2004

International Patent Classification (IPC) or both national classification and IPC
E21B34/04, E21B33/035, E21B33/043, E21B34/10

Applicant
ENOVATE SYSTEMS LIMITED

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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INTERNATIONAL SEARCHING AUTHORITY

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10/587329

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 1-41

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☒ the claims, or said claims Nos. 1, 2, 4, 14, 27, 28, 38-41 are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the whole application or for said claims Nos. 3, 5-13, 15-26, 29-37

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐ has not been furnished

☐ does not comply with the standard

the computer readable form

☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

☒ See separate sheet for further details

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

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Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has:
- ☒ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☐ not paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
- ☒ not complied with for the following reasons:
- see separate sheet**
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
- ☒ the parts relating to claims Nos. 1,2,4,14,27,28,38-47

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	43,45
	No: Claims	42,44,46,47
Inventive step (IS)	Yes: Claims	
	No: Claims	42-47
Industrial applicability (IA)	Yes: Claims	42-47
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item III.

1. FIRST INVENTION (Claims 1,2,4,14,27,28,38-41)

1.1 The various definitions of the subject-matter given in the plurality of independent claims (claims 1, 14, 27, 28, 38 and 40), each reciting a different combination of limitations expressed at different levels of generalizations and largely repetitive, are such that the claims as a whole are not clear and concise. The requirements of Article 6 PCT, therefore, are not met.

1.2 Consequently, the different combinations of features recited in the plurality of independent claims do not allow to correctly identify "the claimed invention" on which an opinion in the sense of Article 33.1 PCT should be based.

1.3 Therefore, this presentation of a number of independent claims makes it difficult, if at all possible, to determine the matter for which protection is sought and places an undue burden to others seeking to establish the extent of monopoly requested. For this reason a full substantive preliminary examination cannot be carried.

Re Item IV.

The separate inventions/groups of inventions are:

1. Claims 1,2,4,14,27,28,38-41

A completion suspension valve system and a method of remotely suspending and desuspending a well.

2. Claims 3,5,6,13,19-22,26,36,37

A ball element and ball valve seat having an offset throughbore.

3. Claims 7,8,16,17,23,29-32,34

A ball valve actuating mechanism.

4. Claims 9-12,15,18,24,25,33,35

A system and method to move a valve to the open position and lock the valve in that position.

5. Claims 42-47

A completion suspension valve system comprising a flapper valve that can be locked in the closed position.

The reasons for which the present application has been deemed to contain five inventions which are not linked such that they form a single general inventive concept, as required by Rules 13.1, 13.2 and 13.3, PCT are as follows:

The closest prior art has been identified as: WO 00/47864 (see search report).

Invention 1:

From a comparison of the disclosure of this prior art and the technical features of the first invention, the following technical features of claim 2 of the first invention can be seen to make a contribution over this prior art (Special Technical Feature (STF), (Rule 13.2 PCT)):

The production bore is offset from the centre of the valve housing;

From this STF the objective problem to be solved by the first invention can be construed as:

To allow the system to be connected to a tubing hanger with an offset production bore (see for example figure 13 of the application);

Invention 2:

From a comparison of the disclosure of this prior art and the technical features of the second invention, the following (potential) special technical feature(s) can be seen to make a contribution over this prior art:

A ball element having an offset throughbore;

From these, the objective problem to be solved can be construed as:

Increasing the differential pressure bearing capability for a given sphere and bore size (see page 22, line 8-10 of the application);

Invention 3:

From a comparison of the disclosure of this prior art and the technical features of the third invention, the following (potential) special technical feature(s) can be seen to make a contribution over this prior art:

Actuation means;

From these, the objective problem to be solved can be construed as:

Rotating the ball valve to the open or closed position (page 27, line 2-11 of the application);

Invention 4:

From a comparison of the disclosure of this prior art and the technical features of the fourth invention, the following (potential) special technical feature(s) can be seen to make a contribution over this prior art:

Override means;

From these, the objective problem to be solved can be construed as:

Locking the ball valve in the open position (see page 31, line 8-11 of the application);

Invention 5:

From a comparison of the disclosure of this prior art and the technical features of the fifth invention, the following (potential) special technical feature(s) can be seen to make a contribution over this prior art:

Locking means for locking the flapper in the closed position;

From these, the objective problem to be solved can be construed as:

Containing differential pressures from both directions (see page 58, line 16 - page 59, line 9 of the application);

The above analysis shows that the special technical features of invention 1 are neither the same as nor corresponding to those of inventions 2-5.

In conclusion, therefore, the five groups of claims are not linked by common or corresponding special technical features and define five different inventions not linked by a single general inventive concept. The application, hence does not meet the requirements of Unity of Invention as defined in Rule 13(1) & (2) PCT.

Re Item V.

1 FIFTH INVENTION (Claims 42-47)

- 2** The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claim 42 is not new in the sense of Article 33(2) PCT.

The document US-B-6.508.309 discloses in column 5, line 8 - column 6, line 62 and in figures 1-5 (the references in parentheses applying to this document):

A completion suspension valve system (10) comprising:

- a suspension valve housing (12), said housing (12) having a valve bore (48);
- a flapper valve element (18) disposed in said housing (12) and being moveable between a first position (figure 1) where the bore (48) is clear and a second position (figure 2) where said bore (48) is occluded;
- upper piston means (36) having a throughbore and being moveable between a lower position (figure 1) and an upper position (figure 2), said upper piston means (36) maintaining the flapper valve (18) in said first position (figure 1) when in said lower position (figure 1) and permitting the flapper valve (18) to move to said second position (figure 2) when in said upper position (figure 2);
- lower piston means (34) having a throughbore and being moveable between a lower position (figure 1) and an upper position (figure 2) for engaging with said flapper valve (18) when said flapper valve (18) is in said second position (figure 2) occluding said valve bore (48), the arrangement being such that
- when said first piston (36) is moved to said upper position (figure 2) said flapper valve element (18) is urged to occlude said bore (48) and said lower piston (34) is moved to said upper position (figure 2) to engage an underside of said flapper valve (18) whereby said flapper valve element (18) is capable of containing differential pressure from below and above said valve element (18) (see column 5, lines 52-64 and figure 29).

A similar line of reasoning applies to independent claims 46 and 47.

3 Dependent claims 43-45 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, the reasons being as follows:

- Claims 43, 45: The features as mentioned in claims 43 and 45 are merely one of several straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to solve the problem posed.
- Claim 44: see US-B-6.508.309, column 5, line 8 - column 6, line 62 and figures 1-5.

Re Item VIII.

The application does not meet the requirements of Article 6 PCT, because claims 1, 27, 28, 38, 39, 41, 42, 46 and 47 are not clear.

The term "suspension valve" used in claims 1, 27, 28, 38, 39, 41, 42, 46 and 47 has no well-recognised meaning and leaves the reader in doubt as to the meaning of the technical features to which it refers, thereby rendering the definition of the subject-matter of said claims unclear, Article 6 PCT.